2001-K-211 OMB Approval No. 0348-0043

FEDERAL ASSISTA	NCE	2. DATE SUBMITTED		Applicant Identifier	
		04-26-2000			
1. TYPE OF SUBMISSION:		3. DATE RECEIVED B	Y STATE	State Application Identifier	
Application Construction	Preapplication Construction	4. DATE RECEIVED B	Y FEDERAL AGENCY	Federal Identifier	
Non-Construction	☐ Non-Construction		•		
5. APPLICANT INFORMATION	<u> </u>			•	
Legal Name:			Organizational Unit: CA-W Fish Heal	th Center	
Address (give city, county, State	e, and zip code):		Name and telephone	number of person to be contacted on matters involvin	
24411 Coleman Fish Hat	chery Rd.		this application (give a	rea code)	
Anderson, CA 96007			J. Scott Foott		
6. EMPLOYER IDENTIFICATION	AN AURIDED /C/A/).		530-365-4271	ANT: (enter appropriate letter in box)	
6. EMPLOYER IDENTIFICATION OF THE PROPERTY OF	IN NOMBER (ENV).		A. State	N	
8. TYPE OF APPLICATION:			B. County	H. Independent School Dist.  1. State Controlled Institution of Higher Learning	
1	· _		C. Municipal	J. Private University	
Ne∙	w Continuation	Revision	D. Township	K. Indian Tribe	
If Revision, enter appropriate let	ter(e) in hov(es)	] []	E. Interstate	L. Individual	
i Hevision, enter appropriate les			F. Intermunicipal	M. Profit Organization	
A. Increase Award B. De	crease Award C. Increas	e Duration	G. Special District	N. Other (Specify) Fed. Covt.	
	(specify):	,	or openion		
			9. NAME OF FEDERA	AL AGENCY:	
		· · · · · · · · · · · · · · · · · · ·	U.S. Fish and	Wildlife Service	
10. CATALOG OF FEDERAL D	OMESTIC ASSISTANCE N	UMBER:	11. DESCRIPTIVE TI	TLE OF APPLICANT'S PROJECT:	
	· •		Health and Physic	ological Effects of Elevated Water	
	ŧ			Merced River Juvenile Chincok during	
TITLE:			the Parr-Smolt t		
12. AREAS AFFECTED BY PR	OJECT (Cities, Counties, Sta	ates, etc.):	de la diese		
Merced & San Joaquin	<del></del>				
13. PROPOSED PROJECT	14. CONGRESSIONAL DI 18, 11	STRICTS OF:			
Start Date Ending Date	a. Applicant		b. Project		
15. ESTIMATED FUNDING:			16. IS APPLICATION ORDER 12372 PF	SUBJECT TO REVIEW BY STATE EXECUTIVE	
a. Federal	T\$	- CO	UNDER 123/2 PR	IUCESS!	
a. receial	<b>1</b> •	14,8 <b>30</b> <sup>∞</sup>	a. YES. THIS PREA	APPLICATION/APPLICATION WAS MADE	
b. Applicant	\$	00	=	TO THE STATE EXECUTIVE ORDER 12372	
	'		PROCESS	FOR REVIEW ON:	
c. State	\$	.00	DATE	<u></u>	
d. Local	\$	00	   b No □ PROGRA	AM IS NOT COVERED BY E. O. 12372	
e. Other	\$	oc .	<b>-</b>	GRAM HAS NOT BEEN SELECTED BY STATE	
f. Program Income \$		00	17 IS THE ADDITION	AT DEI MONENT ON ANY CEDEDAL DEDTS	
3. TOTAL \$ 14,830°°		14,8 <b>30</b> °°	17. IS THE APPLICANT DELINQUENT ON ANY FEDERAL DEBT?  ☐ Yes If "Yes," attach an explanation.		
18. TO THE REST OF MY KNO	WLEDGE AND BELLEF. AT	L DATA IN THIS APPLIC	ATION/PREAPPLICAT	ION ARE TRUE AND CORRECT, THE	
	AUTHORIZED BY THE GO	VERNING BODY OF TH		HE APPLICANT WILL COMPLY WITH THE	
Type Name of Authorized Rep     J. Scott Foott		b. Title Project Leader		c. Telephone Number 530–365–4271	
I. Signature of Authorized Repre	esentative	1		e. Date Signed	
Previous Edition Usable				5/2 8/00 Standard Form 424 (Rev. 7-97)	

authorized for Local Reproduction

**APPLICATION FOR** 

Prescribed by OMB Circular A-102

PART E: Certification Regarding Lobbying
Certification for Contracts, Grants, Loans, and Cooperative Agreements

CHECK IF CERTIFICATION IS FOR THE AWARD OF ANY OF THE FOLLOWING AND THE AMOUNT EXCEEDS \$100,000: A FEDERAL GRANT OR COOPERATIVE AGREEMENT; SUBCONTRACT, OR SUBGRANT UNDER THE GRANT OR COOPERATIVE AGREEMENT.

CHECK\_IF CERTIFICATION IS FOR THE AWARD OF A FEDERAL LOAN EXCEEDING THE AMOUNT OF \$150,000, OR A SUBGRANT OR SUBCONTRACT EXCEEDING \$100,000, UNDER THE LOAN.

The undersigned certifies, to the best of his or her knowledge and belief, that:

- (1) No Federal appropriated funds have been paid or will be paid, by or on behalf of the undersigned, to any person for influencing or attempting to influence an officer or employee of an agency, a Member of Congress, and officer or employee of Congress, or an employee of a Member of Congress in connection with the awarding of any Federal contract, the making of any Federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any Federal contract, grant, loan, or cooperative agreement.
- (2) If any funds other than Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with this Federal contract, grant, loan, or cooperative agreement, the undersigned shall complete and submit Standard Form-LLL, "Disclosure Form to Report Lobbying," in accordance with its instructions.
- (3) The undersigned shall require that the language of this certification be included in the award documents for all subawards at all tiers (including subcontracts, subgrants, and contracts under grants, loans, and cooperative agreements) and that all subrecipients shall certify accordingly.

This certification is a material representation of fact upon which reliance was placed when this transaction was made or entered into. Submission of this certification is a prerequisite for making or entering into this transaction imposed by Section 1352, title 31, U.S. Code. Any person who fails to file the required certification shall be subject to a civil penalty of not less than \$10,000 and not more than \$100,000 for each such failure.

As the authorized	d certifying offici	al, I hereby ce	rtify that the a	above specif	ied certification	ns are true.	
SIGNATURE OF	AUTHORIZED (	CERTIFYING C	DEFICIAL				
Diger and a							 
TYPED NAME AN	ND TITLE	· .					
	•						 · · ·
DATE							

# 4.5 PSP Cover Sheet (Attach to the front of each proposal)

Proposal Title: Health & Physiological Effect	ts of Elevated Water Temperatures on Juvenile Chinook
T South houth	· · · · · · · · · · · · · · · · · · ·
Mailing Address: (A-W Fish Feature Card	er, 24411 Coleman Fish Hatchery Rd., Anderson, CA 96007
Telephone: 530-365-4271	
Fax: 530-365-7150	
Email:scott_foott@fws.gov	
Eman	
Amount of funding requested: \$14,830_	
Indicate the Topic for which you are applying	g (check only one box).
	☐ Introduced Species
☐ Fish Passage/Fish Screens	
□ Habitat Restoration	
□ Local Watershed Stewardship	☐ Environmental Education
□ Water Quality	
	14 .: 0 77 1402 700
Does the proposal address a specified Focuse	ed Action? X yesno
What county or counties is the project locate	d in/ Merced, San Joaquin
	1 ( ) - 1- only one how):
Indicate the geographic area of your proposa	I (check only one box).
☐ Sacramento River Mainstem	□ East Side Trib:
□ Sacramento Trib:	Suisun Marsh and Bay
San Ioaguin River Mainstem	□ North Bay/South Bay:
☐ San Joaquin Trib:	□ Landscape (entire Bay-Delta Watershed)
Delta:	□ Other:
	·
Indicate the primary species which the propo	osal addresses (check all that apply):
San Joaquin and East-side Delta tributa	ries fall-run chinook saimon
☐ Winter-run chinook salmon	□ Spring-run chinook saimon
□ Late-fall run chinook salmon	□ Fall-run chinook salmon
Delta smelt	□ Longfin smelt
□ Splittail	□ Steelhead trout
	☐ Striped bass
	□ All chinook species
□ Migratory birds	□ All anadromous salmonids
Other:	<del>-</del>
The state of the s	get (s) that the project addresses. Include page
Specify the EKP strategic objective and targ	Volume I and II:
numbers from January 1999 version of ERP	
Artificial Fish Propagation, Page 421	) Parais 64 421
Water Quality (Temperature & Contaminants)	1.44.5 01, 721

	•		•
	licate the type of applicant (check or State agency Public/Non-profit joint venture Local government/district University	nly one box)	Federal agency Non-profit Private party Other:
	University	· .	
Ind	licate the type of project (check only	one box):	
	Planning		Implementation
<u> </u>	Monitoring		Education
	Research	•	
	•		
	and the second second second	aa tha fallaw	nina.
Ву	signing below, the applicant declare	es ine miow	ing.
1.)	The truthfulness of all representati	ions in their	proposal;
2.)	The individual signing the form is applicant (if the applicant is an en	entitled to s tity or organ	ubmit the application on behalf of the ization); and
3.)	confidentiality discussion in the Pa	SP (Section	and understood the conflict of interest and 2.4) and waives any and all rights to privacy f the applicant, to the extent as provided in the
:	J. Scott Foott	·	
Pri	nted name of applicant		
	Hu In		
Sig	nature of applicant		

## United States Department of the Interior

### FISH AND WILDLIFE SERVICE CALIFORNIA- NEVADA FISH HEALTH CENTER 24411 Coleman Fish Hatchery Road Anderson, CA 96007

CALFED Bay-Delta Program 2001 Proposal Reviewers 1416 Ninth St., Suite 1155 Sacramento, CA 95814

May 8, 2000

Dear Sir / Madam,

I believe that the Fish Health Center's two FY2001 research proposals;

Health monitoring of hatchery and natural fall-run chinook juveniles in the San Joaquin R. system and Delta and

Health and Physiological effects of elevated water temperatures on Merced R. juveniles chinook during the parr-smolt transformation: Daily fluctuation and range representative of spring water temperatures in the San Joaquin system and Delta

are exempt from the CALFED requirement for pre-project public notification. Neither of these research projects will involve local entities or require land use changes.

I have also been advised the FWS cannot agree to a 10% retention clause for State funded projects and have attached specific language regarding this matter (H. COMPLIANCE WITH STANDARD TERMS AND CONDITIONS).

Please contact me if there are any questions (530-365-4271). Thank you.

Sincerely.

J. Scott Foott Project Leader

#### H. COMPLIANCE WITH STANDARD TERMS AND CONDITIONS

The Fish and Wildlife Service (Service) cannot agree to a standard clause requested for State funded projects. Attachment D, Terms and Conditions for State Proposition 204 Funds, Section 3, states "Performance Retention: Disbursements shall be made on the basis of costs incurred to date, less ten percent of the total invoice amount. Disbursement of the ten percent retention shall be made either: (1) upon the Grantee's satisfactory completion of a discrete project task (ten percent retention for task will be reimbursed); or (2) upon completion of the project and Grantee's compliance with project closure requirements specified by CALFED (ten percent retention for entire project will be disbursed)".

The Services's authorization to enter into agreements with non Federal entities was changed in FY 2000. Our FY2000 Appropriations bill authorizes the Service to enter into contracts with State agencies when advance payment to the Service is not possible. In accordance with the requirements imposed by Congress in the FY2000 Appropriations bill and report language, the Services Director must approve a project when advance payment is not possible and certify that payments will be made in full by the State within 90 days after the Service issues an invoice.

Specifically, the 10% retention clause cannot allow timely payments for the following reasons: In our Federal Financial System (FFS) accounting program, a periodic invoice (either quarterly or monthly depending on the terms of the contract) is automatically issued from our finance center based on actual expenditures of the Service on a project. Invoices include a payment due date on the invoice and when payment is not received in full by that due date, the system automatically shows the unpaid balance as delinquent. Depending on how delinquent the payment is, interest, penalty and administrative charges may also accrue. With 10% retention withheld on each invoice, the 10% retention amount then causes applicable invoice record in FFS to be partly delinquent and remain delinquent until the project or individual tasks identified in the contract are completed and the retention is released.

The Service's Finance Center must report to the Department of Treasury if the Service is owed funds by any entity. Therefore, when accounts remain delinquent due to the 10% retention of payments owed the Service, that delinquency continues to be reported to Treasury.

The Service has previously entered into agreements with the State of California that do not contain the 10% retention clause. We have asked the States Deputy Attorney General (see attached letter) to provide clarifying guidance to the Department of Water Resources that is general in scope, which can also be applied to contracts related to the CALFED program.

Our offices will continue to work with the State closely on State funded projects. If the State is not satisfied with the work performed by the Service, the State project manager should contact the Service's project manager to correct the performance problem. If needed, upon notification interim billings can be canceled until the State is satisfied with the Services performance.

We can comply with all other State and Federal standard clauses.

Health and Physiological Effects of Elevated Water Temperatures on Merced R. Juvenile Chinook during the Parr-Smolt transformation: Daily fluctuation and range representative of spring water temperatures in the San Joaquin River system and Delta

**Primary Contact:** 

J. Scott Foott, PhD

U.S. Fish & Wildlife Service

California - Nevada Fish Health Center

24411 Coleman Hatchery Road

Anderson, CA 96007

Phone:

530-365-4271

Fax:

530-365-7150

Email:

Scott Foott@fws.gov

#### Type of Organization / Tax status:

Federal Government / Tax exempt

#### **Executive Summary**

This project will identify the extent of health and physiological dysfunction incurred by elevated spring water temperatures upon Merced River juvenile chinook (*Oncorhynchus tshawytscha*). Inadequate information on the effects of elevated temperatures, on a local stock of chinook which have evolved in the San Joaquin River System, reduces the confidence of water managers when modeling flow regimes for smolt benefits. Survival of these fish can be affected by sub-lethal physiological dysfunction during the critical parr-smolt transformation and the resultant drop in performance (predator avoidance, saltwater adaptation, immune function). The requested funds for this experiment total \$14,830.

#### **Project Description**

Juvenile chinook, acclimated to a moderately high temperature (19 °C), will be subjected to 2 temperature regimes at the time of their presumed parr-smolt transformation. Temperature regimes will fluctuate in a diurnal pattern in an attempt to simulate river conditions. The low regime will range from 17 - 20 °C while the high regime will have a range of 19 - 23 °C. These temperature regimes were selected from the range of surface measurements recorded in the April - June 30 period during 8 year's of biosampling efforts (Interagency Ecological Program {IEP} database rm 41 - 51,1992 - 1999). Test fish will be evaluated for smolt development, immunodefenses, and recovery from stress over a 3 week period. Quarterly and a final report would be

produced by the principal investigator as well as oral presentation(s) of the study results.

#### Location

Juvenile Fall-run Chinook will come from the California Department of Fish & Game {CDFG} Merced River Fish Facility (MRFF) and the experiments conducted at the CANV Fish Health Center (FHC) Wet laboratory (Anderson, CA).

#### **Ecological / Biological Objectives**

Declining chinook populations in the Central Valley has prompted an intense restoration effort of this valuable resource and a key element of the State's aquatic biodiversity. Health and fitness of juvenile salmon out-migrants ("smolts") are major determinates of their performance and survival. Contaminants and elevated water temperature have been identified in the CALFED process as stressors for salmonids in the San Joaquin River and Delta. Both of these stressors would have the potential for immuno-suppressive and developmental effects. Flow manipulations, to alter water temperatures at critical life stages, are one option for system changes to enhance salmonid survival.

#### Linkage

This project is primarily directed at the topic of water quality (i.e. evaluation of the biological processes governed by stream temperature, Feb. 1999 revised ERP Vol.1 and 2, pg 64), however, it also addresses another ERP topic: fish management / hatchery operations of a CALFED priority species (pg 421, Artificial Fish Propagation). This aspect is reflected in the role water temperature plays in release timing decisions from MRFF.

#### Systemwide ecosystem benefits

Data from this project will complement the quantitative efforts of the IEP bio-sampling program by providing qualitative in-sight into the health effects of elevated temperatures on the survival potential of the system's juvenile chinook population. Data can also be used by the CDFG in development of optimal hatchery operations for the basin.

#### **Technical feasibility and Timing**

This project will require 900 juvenile chinook from the MRFF. Permission from CDFG for such a transfer has been requested by the primary investigator.

#### Methodology

In late March, 900 parr will be moved from MRFF to the CA-NV FHC's wet lab and gradually acclimated to 19 °C over a 10 day period. Equally numbers of fish will be allocated to 2 sets of replicate tanks. One replicate group will be exposed to a diurnal temperature fluctuation of 17 - 20°C while the other group will experience a fluctuation

of 19 - 23 °C. Fish will be fed to satiation daily with a diet of tubifex worms and freezedried krill to simulate a switch to a natural diet Water temperature, ammonia, pH, dissolved oxygen, and mortality will monitored throughout the experiment. A suite of assays will be performed on fish from each group on day 0, 7, 14, and 21 following the initial temperature fluctuation:

Before and 1 hour after two 30 second net stress events ( Recovery from stress: within 10 minutes), plasma glucose response and blood ion content will be evaluated in the groups. The ability to return to a normal plasma profile will be evaluated after 24 hours.

Immunodefenses: Plasma protein changes (immunoglobulin, etc) will be evaluated by electrophoretic profiles. Circulating leukocyte numbers will be estimated from leukocrit data and phagocyte number will tested by the Nitroblue tetrazolium assay with cells from the spleen and anterior kidney. Groups of 25 fish will challenged with Flavobacterium columnare (an endemic bacterial pathogen which causes mortality in summer out-migrants) to determine disease resistance.

Smolt Development. Ability to adapt to seawater will tested in a progressive (18,22, 28 ppt) 3 day saltwater challenge. Performance measurements include survival, dehydration, plasma sodium and osmolarity, and gill ATPase activity. Growth, histological changes to select organs, and % lipid will also be monitored.

#### Local involvement

No local entity involvement or impacts are foreseen.

#### Cost

Total request for the project is \$14,830. Categorical breakdown is as follows:

### Personnel:

GS4 (temp. FTE) and GS7 (50% time) biologists	\$10,000
Supplies / power costs:	\$ 4,400
3% FWS overhead charge	\$ 430

Table 3. Budget

i abie <u>5.</u>	Duugei		<del>,</del>	T		1	
task	Labor hrs	salary /bene.	service contracts	materials	misc.	O/H 3%	total
1.	80	\$ 1000	\$0	\$4000	\$ 0	\$150	\$5150
2	320	\$ 4000	\$0	\$0	\$400	\$132	\$4532
3	368	\$ 4600	\$0	\$0	\$0	\$138	\$4738
4	32	\$ 400	\$0	\$0	\$0	\$12	\$412
totals	800hr	\$10,000	\$0	\$4,000	\$400	\$432	\$14832

Table 4. Quarterly Budget

task	oct-dec99	jan-mar00	apr-jun00	jul-sep00	oct-dec00	totals
1	\$0	\$5150	\$0	\$0	\$0	\$5150
2	\$0	\$0	\$4530	\$0	\$0	\$4530
3	\$0	\$0	\$4740	\$0	\$0	\$4740
4	\$0	\$0	\$ 410	\$0	\$0	\$ 410

#### **Schedule**

	<del></del>	
Task 1	Acquire supplies / hire & train technician / test system	March 1, 2001
Task 2	Transport fish / acclimate / run study	April - May 2001
Task 3	Perform lab assays, analyze data	April - June 2001
Task 4	Prepare quarterly & final report	June30 & Sept 30,
	• • •	2001 for final report
Task 5	Present data for CALFED cooperators	Oct 2001

#### **Cost-sharing**

Principle investigator salary for project estimated \$4000.

#### **Applicant Qualifications**

John Scott Foott

#### Education

PhD, Comparative Pathology 1989 University of California, Davis B.S. Biol. Sciences (Marine Biol.) 1982 California Polytechnic State University, San Luis Obispo

#### Professional Experience

USFWS	1989 -present	Fish Health Biologist & Project Leader
Idaho Dept. Fish 8		Fishery Pathologist

Two controlled laboratory studies on elevated temperature effects on Trinity R. juvenile chinook smolts were conducted at the FHC in June of 1998 and 1999 (reports pending). Smolt development of fish held at the higher temperatures (21- 24°C) were inhibited and cumulative mortality higher than low temperature groups (17 - 20°C). Experience learned from these studies have been incorporated into the design of the proposed study.

Health and Physiological effects of elevated water temperatures on Merced R. juveniles chinook during the parr-smolt transformation: Dally fluctuation and range representative of spring water temperatures in the San Joaquin system and Delta

### **Environmental Compliance Checklist**

All applicants must fill out this Environmental Compliance Checklist. Applications must contain answers to the following questions to be responsive and to be considered for funding. Failure to answer these questions and include them with the application will result in the application being considered nonresponsive and not considered for funding.

1.	Do any of the actions included in the proposal require compliance with either the California Environmental Quality A (CEQA), the National Environmental Policy Act (NEPA), or both?					
	YES	X <sub>NO</sub>				

2. If you answered yes to #1, identify the lead governmental agency for CEQA/NEPA compliance.

Lead Agency

3. If you answered no to #1, explain why CEQA/NEPA compliance is not required for the actions in the proposal.

No land use or water manipulation. Research on Mercel R. Fish Facility chinook with the approval of CDFG.

- If CEQA/NEPA compliance is required, describe how the project will comply with either or both of these laws.
   Describe where the project is in the compliance process and the expected date of completion.
- 5. Will the applicant require access across public or private property that the applicant does not own to accomplish the activities in the proposal?

YES X

If yes, the applicant must attach written permission for access from the relevant property owner(s). Failure to include written permission for access may result in disqualification of the proposal during the review process. Research and monitoring field projects for which specific field locations have not been identified will be required to provide access needs and permission for access with 30 days of polification of approval.

6.	Please indicate what permits or oth boxes that apply.  LOCAL	ter approval:	s mày be required fo	r the activities	contained to	in and a second	
	LOCAL			, .	- Mod III	Angr btobogs!	Check all
	Conditional use parmit			•		,	
	y arinnce		•	••		•	
	Subdivision Map Act approval		_	•	·		•
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1	Other_				•		
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	ESA Compliance		4 · · · · · ·	100		•	•
Č	treambed alteration permit		(CDFG)				
Č	WA § 401 certification		(CDFG)				
R	oastal development permit eclamation Roard approval	_	(RWQCB)		•	'ı •	
N	offication apard approval		(Coastal Commis	sion/BCDC)	•		
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Ott	ler		(ACOE)			•	•
Non	(please specify) e required		_,			•	

DPC = Delta Protection Commission
CWA = Clean Water Act
CESA = California Endangered Species Act
USFWS = U.S. Fish and Wildlife Service
ACOE = U.S. Army Corps of Englineers

ESA = Endangered Species Act

CDFG = California Department of Fish and Game

RWQCB = Regional Water Quality Control Hoard

BCDC= Bay Codservation and Development Comm.

5>	Health and Physiological effects of 85/08, parr-smolt transformation: Dally flu San Joaquin system and Delta	elevated water tempo uctuation and range n		iuveniles chinook d water temperature:	
	Land Use Checklist	:			
<u>.</u>	All applicants must fill out this Land Us following questions to be responsive and include them with the application will reconsidered for funding.	e Checklist for their I to be considered for Isult in the application	r proposal. Applicati or funding. <i>Eailure t</i> ion being considered	ons must contain o <u>answer these qu</u> nonresponsive ar	answers to the
4	- Into the				
. 1	<ol> <li>Do the actions in the proposal involve pl or restrictions in land use (i.e. conservat</li> </ol>	tysical changes to the ion casement or place:	iand(i.e. grading, planti ment of land in a wildli	ng vegetation, or br le refuge)?	eeching levees)
	YES		×	•	
	1.05		NO		•
. 2.	2. IINO to #1, explain what type of actions  Research only	s are involved in the p	roposal (i.e., research o	oly, planning only).	
	•/				
3.	3. If YES to # 1, what is the proposed land	use change or restricti	on under the proposal?		• .
			•		•
					. •
4.		a Williamson Act con	tract?		
<b>.</b>	YES	•	NO		
5,	. If YES to # 1, answer the following:				•
	Current land use				
	Current zoning Current general plan designation	,			
6.	If YES to #1, is the land classified as Prim. Department of Conservation Important F:	e Farmland, Farmland armland Maps?	d of Statewide Importar	zce or Unique Farm	land on the
	YES				
		NO .	DON'T KNOW	•	
7,	If YES to #1, how many acres of land will	be subject to physical	change or land use rest	Tictions under the n	Toposal?
				and the h	a oposar:
8.	If YES to #1, is the property currently beli	ng commercially farm	ed or grazed?		
			•		
	YES		NO		
9.	If YES to #8, what are				. '
		the number of emplo the total number of	oyees/acre employees	· —	
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Health monitoring of hatchery and natural fall-run chinook juveniles in the San Joaquin R. system and Delta

	and under the land under	I the property	•		
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10. Will the applicant acquire:	*		. \	i strott 6326	ment)?
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Number of acres to be subject	. to conservation éasemer	nt ·			
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For land acquisitions (fee title or YES	THE PERSON NAMED IN TAIL OF TH	water rights als	o be gennived	,	
YES .			- ( <u>1</u> = 11	í .	
	•	.*			,
Does the applicant propose any m		NO			
Princant propose any m	odifications to st	•			•
	to the water	right or change	in the same	• •	: •
YES			THE GELLACIA	of the water?	
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fVno					
f YES to # 15, describe	•		•	•	
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f YES to # 15, describe					• ,
f YES to # 15, describe				•	
f YES to # 15, describe					